

## **REMARKS**

**[0003]** Applicant respectfully requests reconsideration and allowance of all of the claims of the application. The status of the claims is as follows:

- Claims 1-11 and 13-23 are currently pending
- Claims 1, 14, and 19 are amended herein
- Claims 4, 16, and 22 are canceled herein

**[0004]** Support for the amendments presented herein can be found in the specification at least at pages 46, 47, 51, and 60 and within the claims at least including former claims 4, 16, and 22.

## **Cited Documents**

**[0005]** The following documents have been applied to reject one or more claims of the Application:

- Murray: Murray et al, U.S. Application Publication No. 2006/0235968
- Young: Young, U.S. Patent No. 6,782,531
- Kirens: Kirens, U.S. Patent No. 5,864,862

## **Claims 1-11 and 13-23 Are Non-Obvious Over Murray in view of Young and further in view of Kirens**

**[0010]** Claims 1-11 and 13-23 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Murray in view of Young and further in view of Kirens. Applicant respectfully traverses the rejections. Nevertheless, solely in the interest of expediting

prosecution and without commenting on the propriety of the Office's rejections, Applicant herein amends the claims as shown above. Applicant respectfully submits that these amendments render the pending rejections moot.

Independent Claim 1

[0011] Applicant submits that Murray in view of Young and further in view of Kirens does not teach or suggest at least the following features of this claim, as amended (with emphasis added):

    parsing a sequence of object-based commands into individual object-based commands;

    wherein the sequence of object-based commands comprise a command string and the individual object-based commands comprise respective constituent parts of the command string;

    associating each individual object-based command with at least one execution element;

    wherein the at least one execution element comprises one selected from a group consisting of: ***a cmdlet, a function, a filter, an external script and an external executable***;

    executing each execution element associated with each individual object-based command to produce output objects, wherein the execution of each execution element is execution dependent upon an execution-supporting operating environment;

***resolving a parameter of each individual object-based command constituent to the sequence of object-based commands to a data type***;

    wherein a particular parameter of each individual object-based command is provided within an input object responsive to a property declared within an executable element class of the executable element

associated with the individual object-based command comprising at least a name and data type,

when data types of parameters of individual object-based commands are not natively supported by the operating environment, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate an instance of the data type, that defines the data types and creating the instance of the data types for the parameter of each object-based command in the sequence that was resolved to one of the data types;

when data types of parameters of individual object-based commands are different than the data type specified by the property declared within the executable element class of the executable element associated with the individual object-based command, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate the instance of the data type, that defines the data types and creating the instance of the data types for the parameter of each object-based command in the sequence that was resolved to one of the data types; and

wherein the retrieving extended information comprises the use of at least one of ***a property path mechanism, a key mechanism, a compare mechanism, a conversion mechanism, a globber mechanism, a relationship mechanism, and a property set mechanism.***

[0012] Claim 1 recites, "resolving a parameter of each individual object-based command constituent to the sequence of object-based commands to a data type." The Office cites Kirens, column 15, lines 34-36, column 12, lines 56-60, and column 16, lines 11-19 as allegedly teaching this element (Office Action, page 4). Instead Kirens describes an object called a Data Object that stores values of information of a variety of

types. The Data Object of Kirens also contains a handler to which requests are forwarded that references an object that handles a particular value of a type requested.

**[0013]** Applicant submits that Kirens does not teach or suggest the element and features for which it was cited. In contrast, Kirens teaches, "if the Data Object were to hold an integer, then the meta-type is an instance of the IntegerType class. All accesses to the Data Object are forwarded to the meta-type." Applicant submits that Kirens never teaches "resolving a parameter...to a data type" and further "a parameter of [an] individual object-based command constituent to [a] sequence of object-based commands." Kirens simply teaches "programs manipulat[ing] the Data Object and the Data Object forward[ing] these requests to the associated type object" and "creat[ing] a new class for each possible user-defined type... defin[ing] the types and generat[ing] the code to create instances of that type" (column 12 lines 56-60).

**[0014]** Claim 1, as amended to incorporate the subject matter formerly recited in claim 4, also recites:

when data types of parameters of individual object-based commands are not natively supported by the operating environment, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate an instance of the data type, that defines the data types and creating the instance of the data types for the parameter of each object-based command in the sequence that was resolved to one of the data types.

**[0015]** The Office cites Kirens, column 15, lines 21-26 and column 15, lines 42-45 as allegedly teaching this element (Office Action, page 4). Applicant respectfully traverses the rejection. Kirens' teaching is limited to, "[a] first class of solutions aim to create a

new class for each possible user-defined type. The source code generator then defines the types and generates the code to create instances of that type, manipulate the instances and destroy the object when it is no longer needed" (column 12, lines 56-60). Kirens never teaches or suggests "retrieving extended information" or "extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate an instance of the data type." Instead Kirens teaches, "types can be defined by instantiating instances of the type classes and connecting them" (column 16, lines 16-17) and "each of [a] basic type [Strings, Numbers, Arrays, Structures, and Unions] can be represented with a meta-type class where each instance of this meta-type class further represents a user-defined data type. The meta-type class...defined for each basic type describes the behavior of data associated with a user-defined type" (column 15, lines 14-20).

**[0016]** Kirens also fails to disclose "when data types of parameters of individual object-based commands are different than the data type specified by the property declared within the executable element class of the executable element associated with the individual object-based command, retrieving extended information comprising extended metadata and code," as recited in the claim. Kirens, as discussed above, only teaches the Data Object that handles requests and points to the correct object to handle the request for the value.

**[0017]** None of the art referenced teaches or suggests (emphasis added):

the retrieving extended information comprises the use of at least  
one of *a property path mechanism, a key mechanism, a compare*

***mechanism, a conversion mechanism, a globber mechanism, a relationship mechanism, and a property set mechanism.***

**[0018]** As the Office acknowledges, Murray fails to teach or suggest each element and feature of independent claim 1. Nor does Young remedy each deficiency. Furthermore, for at least the reasons discussed above, Kirens fails to teach or suggest each element for which it was cited in the pending rejection.

**[0019]** Moreover, Murray in view of Young in further view of Kirens does not teach or suggest all of the elements and features of this claim, as amended. Accordingly, Applicant respectfully requests that the rejection of this claim be withdrawn.

**Dependent Claims 2, 3, 5-11 and 13**

**[0020]** Claims 2, 3, 5-11 and 13 ultimately depend from independent claim 1. As discussed above, claim 1 is allowable over the cited documents. Therefore, claims 2, 3, 5-11 and 13 are also allowable over the cited documents of record for at least their dependency from an allowable base claim. These claims may also be allowable for the additional features that each recites.

Independent Claim 14

[0021] As amended, independent claim 14 recites:

A computer storage medium having computer executable instructions encoded thereon, which when executed by a computer perform operations facilitating resolution of partially unresolved input comprising:

receiving one or more parseable input objects, the input objects being output from an already processed execution element that is associated with one or more object-based commands of a sequence of commands obtained via an object-based command pipeline within an execution-supporting operating environment,

wherein the one or more parseable input objects include[[ing]] content that uses a data type that is not natively supported by the execution-supporting operating environment or is different than a data type expected due to a property declared within an executable element class of the executable element associated with the one or more object-based commands comprising at least a name and data type,

wherein the sequence of commands comprise a command string and the one or more object-based commands comprise respective constituent parts of the command string, and

wherein the execution of an execution element is execution dependent upon the execution-supporting operating environment to actually execute;

retrieving extended information comprising extended metadata and code that defines the data type,

wherein the extended metadata describes the data type and the code comprises additional instructions to populate an instance of the data type; and

creating the instance of the data type,

wherein the receiving, retrieving, and creating acts facilitate resolution of partially unresolved input.

**[0022]** For at least reasons similar to those discussed above with regards to independent claim 1, this claim stands allowable over Murray in view of Young in further view of Kirens. For example, Murray in view of Young in further view of Kirens fails to teach or suggest (emphasis added):

a data type that is not natively supported by the execution-supporting operating environment or is ***different than a data type expected due to a property declared within an executable element class*** of the executable element associated with the one or more object-based commands comprising at least a name and data type.

**[0023]** Furthermore, Murray in view of Young in further view of Kirens fails to teach or suggest, “retrieving extended information comprising extended metadata and code that defines the data type.” For at least these reasons, claim 14 is allowable over Murray in view of Young in further view of Kirens.

**Dependent Claims 15, 17 and 18**

**[0024]** Claims 15, 17 and 18 ultimately depend from independent claim 14. As discussed above, claim 14 is allowable over the cited documents. Therefore, claims 15, 17 and 18 are also allowable over the cited documents of record for at least their dependency from an allowable base claim. These claims may also be allowable for the additional features that each recites.



Independent Claim 19

**[0025]** As amended, independent claim 19 is directed to a computer system that extends data types available to an operating environment, the system comprising:

a processor; and

a memory, the memory being allocated for a plurality of computer-executable instructions which are loaded into the memory and are executable by the processor to perform operations, comprising:

parsing a sequence of object-based commands into individual object-based commands;

associating each individual object-based command with at least one execution element;

executing each execution element associated with each individual object-based command to produce output objects, wherein the execution of each execution element is execution dependent upon an execution-supporting operating environment;

resolving a parameter of each individual object-based command in the sequence of object-based commands to a data type,

wherein a particular parameter of each individual object-based command is provided within an input object responsive to a property declared within an executable element class of the executable element associated with the individual object-based command comprising at least a name and data type,

when data types of parameters of individual object-based commands that are not natively supported by the operating environment, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate an instance of the data type, that defines the data types and creating the instance of the data types for each individual object-based command in the sequence that was resolved to one of the data types; and

when data types of parameters of individual object-based commands are different than the data type specified by the property declared within the executable element class of the executable element associated with the individual object-based command, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate the instance of the data type, that defines the data types and creating the instance of the data types for the parameter of each object-based command in the sequence that was resolved to one of the data types.

[0026] For at least reasons similar to those discussed above with regards to independent claim 1, this claim stands allowable over Murray in view of Young in further view of Kirens. For example, Murray in view of Young in further view of Kirens fails to teach or suggest (emphasis added):

*retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate an instance of the data type*, that defines the data types and creating the instance of the data types for each individual object-based command in the sequence that was resolved to one of the data types.

[0027] Furthermore, Murray in view of Young in further view of Kirens fails to teach or suggest, "a particular parameter of each individual object-based command is provided within an input object responsive to a property declared within an executable element class of the executable element associated with the individual object-based command comprising at least a name and data type." For at least these reasons, claim 19 is allowable over Murray in view of Young in further view of Kirens.

Dependent Claims 20, 21 and 23

[0028] Claims 20, 21 and 23 ultimately depend from independent claim 19. As discussed above, claim 19 is allowable over the cited documents. Therefore, claims 20, 21 and 23 are also allowable over the cited documents of record for at least their dependency from an allowable base claim. These claims may also be allowable for the additional features that each recites.

Conclusion

[0029] Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the Examiner is urged to contact the undersigned representative for the Applicant before issuing a subsequent Action.

Respectfully Submitted,

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